

## Factors That Affect Profitability of Banks Comparative Study between Indonesian and Hong Kong

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### **Abstract**

*The problem of this research was the influence of liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size toward return on assets. The objective of this research was to identify the factors that influence return of assets of banks listed in Indonesia Stock Exchange and Hong Kong Stock Exchange over the period 2012-2015. The methodology of this research was multiple linear regression which is tested by using classic assumption. Sample in this research were 27 Banks listed in Indonesia Stock Exchange and 13 Banks listed in Hong Kong Stock Exchange over period 2012-2015. Finding and contribution in this research were liquidity risk, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size have influence toward return on assets of banks in Indonesia. Meanwhile, net credit facilities to total assets ratio and total investment to total assets ratio do not have influence toward return on assets of banks in Indonesia. Liquidity risk, total equity to assets ratio, and cost to income ratio have influence toward return on assets of banks in Hong Kong, meanwhile credit facilities to total assets ratio, total investment to total assets ratio, net credit facilities to total deposits ratio, and bank size do not have influence toward return on assets of banks in Hong Kong. Research limitation or implication in this research was for banking management to use the the information to maintain or even increase the profitability of banks, and to investors for being used as considerations to invest in banking sectors.*

**Keywords:** *profitability, liquidity risk, bank size, investment*

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## 1. INTRODUCTION

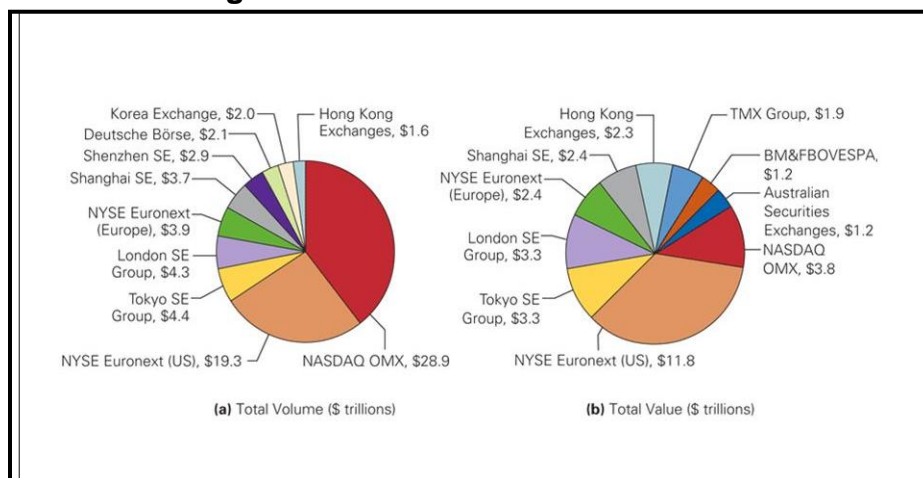
Bank is financial sector that plays significant role in world economic development. Good banking sector can contribute to the stability of financial system and economic development of a country. Not only making contribution to economic development, bank also provides opportunity to society, particularly investors, to invest (Ali, 2016).

The contribution of banking sectors is also seen in Indonesia. Banking sector plays significant role to economic activity. Indonesia's increasing economic development causes banking institutions grow rapidly. This rapid growth results in competitiveness among banks in Indonesia. Therefore, banks are encouraged to create their own excellence (Suryani et al, 2016).

Not only in Indonesia, has economy in Asian countries, even in the world, depended on banking sector. One of which is Hong Kong. Hong Kong's economic development in 2015 was 2.4% compared to Indonesia's economic development which reached 4.8% in 2015 ([www.focus-economics.com](http://www.focus-economics.com)). The competitiveness of banks in Asian countries can be observed from the 10 top banks in the world, in which the top four belongs to banks registered in Hong Kong Stock Exchange ([www.accuity.com](http://www.accuity.com)).

Besides the fact that several banks in Hong Kong are among 10 top banks in the world, Indonesia Stock Exchange and Hong Kong Stock Exchange are incorporated in Asian and Oceania Stock Exchanges Federation. Moreover, Hong Kong Stock Exchange is one out of ten world best stock markets (Berk and DeMarzo, 2014).

**Figure 1. 10 World Best Stock Markets**



Due to banks' significant role in world economic development, particularly economy in each country, there are many factors affecting performances in banking sector that need to be considered. Profitability has been the main concern in banking sector, along with various internal and external factors that influence profitability of bank (Ali, 2016).

Internal factors such as management decision, bank size, capital, risk management, and financial management directly influence the profitability of bank. Other factors such as credits and liquidity are considered as specific factors that have direct impact to risk management. Low quality of asset and poor liquidity become the main causes of bank failure. It attracts researchers to conduct study on those factors towards profitability of bank (Almazari, 2016).

This research is aimed to find out the internal factors that affect the profitability of bank. This research is also conducted to comparatively study the profitability of banks in Indonesia and banks in Hong Kong, as well as the internal factors that affect banking sector the most in the two countries.

## **2. REVIEW OF LITERATURE**

The economy of one country depends on its banking industry. In other words, the role of banking industry is very significant towards the development of other industries in a country. Therefore, the management of bank needs to be considered to maintain economy stability. The profitability of bank becomes one of the things to consider in maintaining the stability of banking industry. Many researchers have analyzed factors influencing the profitability of bank.

The research conducted by Almazari in 2014 points out factors that can influence the profitability of bank. Those are liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size.

Liquidity risk is related to the liquid asset of a bank. The more liquid the asset, the less the liquidity risk is (Ali, 2016). Other risk that a bank may face is loans given to debtors, which source is taken from creditors/ customer. Loans can cause credit risk that can be interpreted as financial loss due to nonperforming loan. High-risk banking sector will increase its credit risk which will decrease the profitability of bank (Almazari, 2014).

However, several things that can increase the profitability of a bank such as interest income from debtors as well as non-interest incomes in form of commission, service cost, income from stock or securities selling, and income from money exchange. The increasing of non-interest income proves that banks do not depend only on traditional activities. The higher non-interest income, the higher bank profit will be (Almazari, 2014).

The profitability of bank can also be increased by minimizing operational cost by using the latest communication, information, and finance technology. It can boost the efficiency of banks' operational and increase the profitability of bank (Almazari, 2014).

Big scale banks can create economies of scale profit to reduce average cost and increase the profitability of bank. However, diseconomies of scale emerge if the size of a bank is bigger, in which management will find more challenge in doing supervising leading to the increasing of bureaucracy. In turn, it will make negative impact on the profitability of bank (Almazari, 2014).

### **2.1. Hypothesis Development**

The more liquid the asset of a bank, a bank will not need more loan to deposit. Therefore banks can avoid the increase of expense in loans. Instead, it can increase the profitability of bank. Almazari (2014), Gunes (2014), as well as Rivard and Thomas (1997) state that there is significant positive influence between liquidity risk and profitability of bank measured through ROA. Whereas Ali (2016) points out that there is significant negative influence between liquidity risk and profitability of bank. Based on several statements above, hypotheses are formulated as follow:

H<sub>1</sub> : There is influence in liquidity risk towards the profitability of bank.

The higher creditor loan, the higher the interest margin and the bank profit obtained will be. Almazari (2014), Ali (2016), Sufian (2011), Rivard and Thomas (1997), and Gunes (2014) state that there is significant positive influence between net credit facilities to total assets ratio and the profitability of bank. Meanwhile, Osuagwu (2014) states that there is significant negative influence between net credit facilities to total assets ratio and the profitability of bank. Based on those statements, the hypothesis is formulated as follow:

H<sub>2</sub> : There is influence in net credit facilities to total assets ratio towards the profitability of bank.

The increasing of non-interest income, one of which is through the investment result from stock or securities, proves that banks do not depend only on traditional activities. The higher non-interest income, the higher the profit of a bank will be. Almazari (2014) states that there is significant positive influence between total investment to total assets ratio and the profitability of bank. Based on those statements, the hypothesis is formulated as follow:

H<sub>3</sub> : There is influence between total investment to total assets ratio and the profitability of bank.

Banks having high capital will cut cost of capital. Hence, it will bring positive impact to the profitability of bank. Almazari (2014), Bejaoui and Bouzgarrou (2014), Gunes (2014), Petria et al. (2015), Sufian and Chong (2008), and Rivard and

Thomas (1997) state that there is significant positive influence between total equity to assets ratio and the profitability of bank. Based on those statements, the hypothesis is formulated as:

H<sub>4</sub> : There is influence between total equity to assets ratio and the profitability of bank.

High-risk banking sector will increase credit risk and it leads to the decrease of the profitability of bank. Almazari (2014), Suryani et al. (2016), and Eng (2013) state that there is significant negative impact between net credit facilities to total deposits ratio and the profitability of bank. This is in reverse with the research conducted by Margaretha and Zai (2013) which explains that there is significant positive influence between *net credit facilities to total deposits ratio* and the profitability of bank. Based on those statements, a hypothesis is formulated.

H<sub>5</sub> : There is influence between net credit facilities to total deposits ratio and the profitability of bank.

The application of latest technology can improve the operational activity of bank. As consequence, it results in increasing the profitability of bank. Bejaoui and Bouzgarrou (2014), Margaretha and Zai (2013), Suryani et al. (2016), Wijaya and Sihombing (2015), and Petria et al. (2015) point out that there is significant negative influence between *cost to income ratio* to the profitability of bank calculated according to *return on assets*. Then, a hypothesis is formulated.

H<sub>6</sub> : There is influence between *cost to income ratio* and the profitability of bank.

It is possible for large-scale banks to earn economic scale profit which can cut the average cost down, thus can increase the profitability of bank. Petria et al. (2015), Ali (2106), and Sufian (2011) mention that there is significant positive influence between bank size and the profitability of bank. However, in the research conducted by Sufian and Chong (2008) and Wijaya and Sihombing (2015), significant negative influence between bank size and the profitability of bank is found. Therefore, the hypothesis is:

H<sub>7</sub> : There is influence between bank size and the profitability of bank.

The increasing of economic growth in Indonesia results in the rapid development of banking institutions. The comparison of the economic growth in Indonesia and one of Asian countries, Hong Kong, can be observed from economic growth ratio. In 2015, the economy in Indonesia grew as much as 4.8%; compared to Hong Kong whose economy grew as much as 2.4%. By considering the percentage, it can be estimated that there is disparity of profitability of banking institution in the two countries. Hence, a hypothesis is formulated:

H<sub>8</sub> : There is disparity of the average profitability of banks in Indonesia and in Hong Kong.

### 3. METHODOLOGY

This research uses secondary data, which is data available from other party. The data analyzed in this research are taken from the financial reports of banks registered in Indonesia Stock Exchange and Hong Kong Stock Exchange during 2012-2015. The financial report of banks in Indonesia can be downloaded from [www.idx.co.id](http://www.idx.co.id) and the financial report of banks in Hong Kong can be downloaded from [www.hkexnews.hk](http://www.hkexnews.hk).

The dependent variable in this research is the profitability calculated from return of assets (ROA) ratio. According to Rivard and Thomas (1997), the best method to calculate the profitability of bank is by using ROA because ROA can assess the ability of bank in earning return from its asset portfolio more accurately.

This research uses seven independent variables namely liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size.

**Tabel 1.** The Measurement of Research Variable

Variable	Proxy	Measurement	Source
Return on Assets (Y)	ROA	$\frac{\text{Income Before Tax}}{\text{Total Assets}}$ Cash and Cash	Suryani et al. (2016)
Liquidity Risk (X <sub>1</sub> )	LQR	$\frac{\text{Equivalent Total Assets}}{\text{Total Assets}}$	Almazari (2014)
Net Credit Facilities to Total Assets Ratio (X <sub>2</sub> )	NCA	$\frac{\text{Net Credit Facilities}}{\text{Total Assets}}$	Almazari (2014)
Total Investment to Total Assets Ratio (X <sub>3</sub> )	TIA	$\frac{\text{Total Investment}}{\text{Total Assets}}$	Almazari (2014)
Total Equity to Assets Ratio (X <sub>4</sub> )	TEA	$\frac{\text{Total Equity}}{\text{Total Assets}}$	Almazari (2014)
Net Credit Facilities to Total Deposits Ratio (X <sub>5</sub> )	LTD	$\frac{\text{Net Credit Facilities}}{\text{Total Deposits}}$	Almazari (2014)
Cost to Income Ratio (X <sub>6</sub> )	CIR	$\frac{\text{Total operating expenses}}{\text{Total operating income}}$	Almazari (2014)
Bank size (X <sub>7</sub> )	SZE	Log (Total Assets)	Almazari (2014)

The sampling method applied in this research is purposive sampling. That is selecting sample based on certain criteria. The samples selected are banks listed in Indonesia Stock Exchange and banks listed in Hong Kong Stock Exchange during 2012-2015. The criteria used in selecting the samples are:

1. Banks registered in Indonesia Stock Exchange and banks registered in Hong Kong Stock Exchange during the research in 2012-2015.
2. Banks registered in Indonesia Stock Exchange and banks registered in Hong Kong Stock Exchange which have negative income before tax balance during the research.

### 3.1. Data Analysis Method

In this research, the data are analyzed using Multiple Regression. The objective of the method is to predict the changes in dependent variables in regards to the changes found in a number of independent variables.

Descriptive statistics are used to describe amount of data through its mean, deviation standard, maximum value, minimum value, range, kurtosis and skewness (Ghozali, 2013). Descriptive statistics measurement is applied towards all variables in this research. Those are return on assets, liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size.

Hypothesis testing is done through multiple linear regression. Multiple linear regression is applied in this research because this method of analysis can describe the influence of each independent variable towards dependent variables (Ghozali, 2013). The regression model in this research is formulated as follows:

Regression Equation Banks in Indonesia

$$ROA_{INA} = \beta_0 + \beta_1LQR + \beta_2NCA + \beta_3TIA + \beta_4TEA + \beta_5LTD + \beta_6CIR + \beta_7SZE + \epsilon$$

Regression Equation Banks in Hong Kong

$$ROA_{HK} = \beta_0 + \beta_1LQR + \beta_2NCA + \beta_3TIA + \beta_4TEA + \beta_5LTD + \beta_6CIR + \beta_7SZE + \epsilon$$

Explanation in Equation:

- ROA<sub>INA</sub> = Return on Asset of banks in Indonesia
- ROA<sub>HK</sub> = Return on Asset of banks in Hong Kong
- LQR = Liquidity Risk
- NCA = Net Credit Facilities to Total Assets Ratio
- TIA = Total Investment to Total Assets Ratio
- TEA = Total Equity to Assets Ratio
- LTD = Net Credit Facilities to Total Deposits Ratio
- CIR = Cost to Income Ratio
- SZE = Bank size
- € = error

Statistics T-test shows how far the influence of one independent variable individually in describing the variation of dependent variable is (Ghozali, 2013). This test can be seen through the t-test value and *sig* value based on this consideration:

1. If *Sig* < 0.05, therefore independent variable individually influences dependent variable.
2. If *Sig* ≥ 0.05, therefore independent variable does not individually influence dependent variable.

### 3.2. Comparison Test

Comparison t-test is applied to decide whether two unrelated samples have different mean. Comparison t-test is conducted by comparing the differences between two average values and standard error from the average comparison of two samples (Ghozali, 2013). The comparison test is conducted using Independent Sample t-Test. There are two phases of analysis that need to be conducted.

1. Examining the assumption whether the population variance of both samples are equal (equal variance assumed) or different (equal variance not assumed) by observing the value of Levene's test. The basis of the justification is as follow:
  - If *sig* < 0.05, therefore there is different variance from the population in both samples (equal variance not assumed).
  - If *sig* ≥ 0.05, therefore there is no different variance from the population in both samples (equal variance assumed).
2. Observing the t-test value to decide whether there is significant different mean found. The basis of the justification is as follow:
  - If *sig* < 0.05, therefore, there is significant difference of mean in samples.
  - If *sig* ≥ 0.05, therefore, there is no significant difference of the mean in both samples.

## 4. RESEARCH FINDINGS

The companies selected as samples are banks in Indonesia and banks in Hong Kong which match the criteria during the research period in 2012-2015. The procedures of the sample selections can be seen in Table 2 and Table 3:



**Table 2.** Sample Selection Procedures of Indonesian Banks

<b>Sample Criteria</b>	<b>Number of Bank</b>	<b>Number of Data</b>
Banks registered in Indonesia Stock Exchange during 2012-2015	32	128
Banks which does not have positive before tax profit balance during four consecutive year	(5)	(20)
<b>Total of bank samples in Indonesia used</b>	<b>27</b>	<b>108</b>
Outlier data		(26)
<b>Total of Samples</b>		<b>82</b>

Source: Data collection results.

**Table 3.** Sample Selection Procedures of Hong Kong Banks

<b>Sample Criteria</b>	<b>Number of Bank</b>	<b>Number of Data</b>
Banks registered in Hong Kong Stock Exchange during 2012-2015	14	56
Banks which does not have positive before tax profit balance during four consecutive year	(1)	(4)
<b>Total of bank samples in Hong Kong used</b>	<b>13</b>	<b>52</b>

Source: Data collection results.

Table 2 shows that there are 32 banks listed in Indonesia Stock Exchange from 2012 until 2015. As many as five banks do not match the sample criterion of having positive before tax profit balance. Hence, there are 27 banks selected as the research data out of 108 total data. After conducting outlier test, there are 26 extreme data found. Therefore, the total data used for this research are 82 data.

Table 3 illustrates that there are 14 banks listed in Hong Kong Stock Exchange from 2012 until 2015. There is one bank which does not match the sample criterion of having positive before tax profit balance. Hence, there are 13 banks selected as the research data out of 52 total data.

#### 4.1. Data Analysis

The findings of residual normality test are illustrated as follows:

**Table 4.** The Findings of Residual Normality Test before Outlier Test

	Data Indonesia Banks	Data Hong Kong Banks
N	108	52
Asymp. Sig. (2-tailed)	0,000	0,200

Source: Data Processed

**Table 5.** The Findings of Residual Normality after Outlier Test

	Data Indonesia Banks	Data Hong Kong Banks
N	82	52
Asymp. Sig. (2-tailed)	0,200	0,200

Source: Data Processed

As seen in Table 4, the result of residual normality test for research model of banks in Indonesia is 0.000 based on the value of asymp. Sig. (2-tailed). The value is lower than 0.05. Thus, a conclusion can be drawn that the data do not have normal distribution. Therefore, outlier test is conducted to omit extreme data. The result of residual normality test that is performed after outlier test illustrated in Table 5 shows the asymp. Sig. (2-tailed) value is 0.200. This value is higher than 0.05. Therefore, it can be concluded that the data have normal distribution. The result of residual normality test for banks in Hong Kong is 0.200 based on the value of asymp. Sig. (2-tailed). The value is higher than 0.05. Thus, it can be concluded that the data have normal distribution.

The result of outlier test shows that there are 26 data which have z-score above 1.96 or below -1.96. Consequently, those 26 data are not included in this research. The findings of multicollinearity test are presented as follows:

**Table 6.** The Result of Multicollinearity Test of Indonesian Banks

Variable	Collinearity Statistics	
	Tolerance	VIF
Liquidity risk	0.225	4.446
Net credit facilities to total assets ratio	0.194	5.148
Total investment to total assets ratio	0.406	2.461
Total equity to assets ratio	0.629	1.591
Net credit facilities to total deposits ratio	0.199	5.018
<i>Cost to income</i> ratio	0.654	1.530
Bank size	0.269	3.720

Source: Data Processed

The findings of multicollinearity test show that the variables namely liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size; have higher than 0.1 in their tolerance value and lower than 10 in their VIF value. It means that there is no correlation among independent variables or multicollinearity. Therefore, regression model is applicable in this research.

**Table 7.** The Result of Multicollinearity Test of Hong Kong Banks

Variabel	Collinearity Statistics	
	Tolerance	VIF
Liquidity risk	0.499	2.003
Net credit facilities to total assets ratio	0.603	1.658
Total investment to total assets ratio	0.388	2.578
Total equity to assets ratio	0.408	2.450
Net credit facilities to total deposits ratio	0.552	1.811
<i>Cost to income</i> ratio	0.728	1.374
Bank size	0.600	1.668

Source: Data Processed

Based on the multicollinearity test, it is found that variables namely liquidity risk, net credit facilities to total assets ratio, total investment to total assets ratio, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size; have higher than 0.1 in its tolerance value and lower than 10 in its VIF value. It shows that there is no correlation among independent variables or multicollinearity. Therefore, regression model is applicable in this research. The result of the autocorrelation test is presented as follows:

**Table 8.** The Result of Autocorrelation Test

Dependent Variables		Sig.
ROA Bank Indonesia	LAG_RES2	0,799
ROA Bank Hong Kong	LAG_RES2	0,731

Source: Data Processed

In the research model of banks in Indonesia, the result of autocorrelation test using *Bruesch-Godfrey* test shows sig. value of LAG\_RES2 is 0.799. The value is higher than 0.05 which indicates that there is no correlation between distraction error in t period and distraction error in the previous period (t-1), thus, there is no autocorrelation occurred. In the research model of banks in Hong Kong, the result of autocorrelation test using *Bruesch-Godfrey* test shows sig. value of LAG\_RES2 is 0.731. The value is higher than 0.05 indicating that there is no correlation between distraction error in t period and distraction error in the previous period (t-1). Hence, there is no autocorrelation occurred and regression model is applicable in this research. The following table presents the result of descriptive statistics test:

**Table 9.** The Result of Descriptive Statistics Test of Indonesian Banks

Variable	N	Mean	Med	Std. Devation	Minimum	Maximum
ROA_INA	82	0.018094	0.0165	0.0083839	0.0024	0.0384
LQR	82	0.175361	0.1732	0.0427601	0.0891	0.2924
NCA	82	0.65554	0.67315	0.0712018	0.448	0.7969
TIA	82	0.088338	0.0771	0.058642	0.0055	0.2227
TEA	82	0.120809	0.12015	0.0305707	0.0702	0.1879
LTD	82	0.851555	0.85375	0.0996309	0.5587	1.074
CIR	82	0.825546	0.82995	0.0713869	0.6647	0.9724
SZE	82	13.705165	13.8378	0.6222238	12.542	14.9437

Source: Data Processed

## 4.2. Discussion

The t-test findings of banks in Indonesia show that the significant value of liquidity risk (LQR) is 0.001, and it is lower than alpha ( $\alpha = 0.05$ ). Thus,  $H_1$  is acceptable. It indicates that liquidity risk has significant positive influence towards the dependent variable of return on assets (ROA). It means the higher the liquidity risk is, the bigger the profitability of banks will be. It is in accordance with the research conducted by Almazari (2014), Gunes (2014), and Rivard and Thomas (1997). Meanwhile, this result is inversely proportional to the research conducted by Ali (2016) stating that liquidity risk (LQR) has significant negative influence towards the dependent variable return on assets (ROA).

The t-test findings of banks in Hong Kong show that the significant value of liquidity risk (LQR) is 0.000, and its value is lower than alpha ( $\alpha = 0.05$ ). Thus,  $H_1$  is acceptable. It indicates that liquidity risk has significant negative influence towards the dependent variable return on assets (ROA). It means the higher the liquidity risk is, the lower the profitability of banks will be. This result is in line with the research conducted by Ali (2016) which points out that liquidity risk has significant negative influence towards return on assets. Meanwhile, this finding is in reverse with the research conducted by Almazari (2014), Gunes (2014), and Rivard and Thomas (1997) stating that liquidity risk brings significant positive influence towards return on assets.

The t-test of banks in Indonesia finds that significant value of net credit facilities to total assets ratio (NCA) is 0.924, higher than alpha ( $\alpha = 0.05$ ). It makes  $H_2$  unacceptable. The t-test of banks in Hong Kong also finds the same result. The significant value net credit facilities to total assets ratio (NCA) is higher than alpha ( $\alpha = 0.05$ ), that is as many as 0.535. Thus,  $H_2$  is unacceptable. These findings indicate that net credit facilities to total assets ratio (NCA) does not influence the dependent variable return on assets (ROA). It is different from the previously conducted research from Ali (2016), Gunes (2014), and Sofian (2011) which state that net credit facilities to total assets ratio has significant positive influence towards return on assets (ROA). However, these findings are in line with the previous research conducted Almazari (2014) and Saira et al. (2011). The higher the credit/loan is, the bigger the contribution of credit/loan towards the profitability will be. It does not affect much when the profit depends only on one asset, though. Consequently, it does not give much contribution to the whole bank profit (Saira et al., 2011).

The t-test of banks in Indonesia finds that the significant value of total investment to total assets ratio (TIA) is 0.140 which value is higher than alpha ( $\alpha = 0.05$ ). Thus,  $H_3$  is unacceptable. The t-test of banks in Hong Kong also finds the same result. The significant value of total investment to total assets ratio (TIA) is

higher than alpha ( $\alpha = 0,05$ ); it is as many as 0.201. Hence,  $H_3$  is unacceptable. It illustrates that total investment to total assets ratio (TIA) does not influence the dependent variable return on assets (ROA). These findings is not in line with the research conducted by Almazari (2014) towards banks in Saudi Arabia which finds that total investment to total assets ratio brings significant positive influence towards return on assets. However, these findings are in accordance with the research conducted by Almazari (2014) towards banks in Jordan and the research by Haron (2004) which points out that total investment to total assets ratio does not influence the return on assets. It is due to fewer funds invested in securities which leads banks cannot maximize their income from the investment (Haron, 2004). It can be found from the average value of total investment to total assets ratio which is only as much as 8.83% for banks in Indonesia and only as much as 17.76% for banks in Hong Kong.

The t-test of banks in Indonesia finds that the significant value of total equity to assets ratio (TEA) is 0.006. This value is lower than alpha ( $\alpha = 0.05$ ). Hence,  $H_4$  is acceptable. It indicates that total equity to assets ratio (TEA) brings significant positive influence towards dependent variable return on assets (ROA). It means the higher the total equity to assets ratio, the bigger the profitability of bank is. It is in accordance with the research conducted by Almazari (2014), Bejaoui and Bouzgarrou (2014), Gunes (2014), Petria et al. (2015), as well as Rivard and Thomas (1997).

The t-test result of banks in Hong Kong figures out that the significant value of total equity to assets ratio (TEA) 0.001, lower than alpha ( $\alpha = 0.05$ ). Thus,  $H_4$  can be accepted. This finding demonstrates that total equity to assets ratio (TEA) has significant negative influence towards dependent variable return on assets (ROA). It means the higher total equity to assets ratio, the lower the profitability of bank is. It is in reverse with the research done by Almazari (2014), Bejaoui dan Bouzgarrou (2014), Gunes (2014), Petria et al. (2015), as well as Rivard and Thomas (1997) which found that total equity to assets ratio has significant positive influence towards return on assets. The different result found in Hong Kong can be caused by the condition of the country. According to Jiang et al (2003), the increasing of capital or equity through share publishing or market share does not increase return on assets value. Return on assets value is more affected by internal factors in the company.

The t-test result of banks in Indonesia shows that the significant value of net credit facilities to total deposits ratio (LTD) is 0.003. This value is lower than alpha ( $\alpha = 0.05$ ). Therefore,  $H_5$  can be accepted. It indicates that net credit facilities to total deposits ratio (LTD) brings significant positive influence towards dependent variable return on assets (ROA). It means the higher net credit facilities to total

deposit ratio, the bigger the profitability of bank is. It is in line with the research conducted by Margaretha and Zai (2013) which states that net credit facilities to total deposit ratio has significant positive influence towards return on assets.

The t-test result of banks in Hong Kong finds that the significant value of net credit facilities to total deposits ratio (LTD) is 0.306 which is higher than alpha ( $\alpha = 0.05$ ). Thus,  $H_5$  cannot be accepted. This finding signifies that net credit facilities to total deposits ratio (LTD) does not influence dependent variable return on assets (ROA). It is unlike the research conducted by Almazari (2014) using banks in Jordan as the object of research, Suryani et al. (2016), and Eng (2013) which point out that net credit facility to total deposit ratio has significant negative influence towards return on assets. Meanwhile, the research finding is in line with the research conducted by Almazari (2014) using banks in Saudi Arabia as the object of research, Sudiyatno (2010), as well as Wijaya and Sihombing (2015) which state that net credit facilities to total deposit ratio does not influence the return on assets. This condition describes banking performance in Hong Kong Stock Exchange is generally inefficient. Hence, the income from the fund given as loan cannot be maximized. This inefficiency can be caused by many nonperforming loans weighing down the bank (Sudiyatno, 2010). The result of descriptive analysis points out that the mean of net credit facilities to total deposits ratio is 0.721812 or 72.1812%. This value is below average point of net credit facilities to total deposits ratio of Hong Kong banking during 2012-2015; that is as much as 81% ([www.hkma.gov.hk](http://www.hkma.gov.hk)).

The t-test result of banks in Indonesia finds out that the significant value of cost to income ratio (CIR) is 0.000 which is lower than the alpha ( $\alpha = 0.05$ ). Thus,  $H_6$  can be accepted. The same result can be obtained for t-test of banks in Hong Kong. The significant value of cost to income ratio (CIR) of banks in Hong Kong is 0.000, lower than the alpha ( $\alpha = 0.05$ ). Hence  $H_6$  can be accepted. It indicates that cost to income ratio (CIR) has significant negative influence towards dependent variable return on assets (ROA). The higher cost to income ratio, the lower the profitability of bank is. This finding is in line with the research conducted by Bejaoui and Bouzgarrou (2014), Margaretha and Zai (2013), Petria et al. (2015), Wijaya and Sihombing (2015), as well as Suryani et al. (2016).

The t-test result of banks in Indonesia shows that the significant value of the bank size (SZE) is 0.030 and it is lower than the alpha ( $\alpha = 0.05$ ). It makes  $H_7$  acceptable. It indicates that the size of the company (SZE) has significant positive influence towards dependent variable return on assets (ROA) which means the bigger the size of a bank, the bigger its profitability is. It is in accordance with the research by Ali (2016), Sufian (2011), Petria et al. (2015) which found out that the bank size significant positive influence towards return on asset.

Whereas the t-test result of banks in Hong Kong shows that the significant value of the bank size (SZE) is 0.251 and it's higher than the alpha ( $\alpha = 0.05$ ). Thus,  $H_7$  cannot be accepted. This finding portrays that bank size (SZE) does not influence the dependent variable return on assets (ROA). Unlike this finding, the research conducted by Ali (2016), Sufian (2011), and Petria et al. (2015) point out that bank size has positive significant influence towards return on asset. However, this finding is in line with previously conducted research Almazari (2014), Gunes (2014), as well as Prasanjaya and Ramantha (2013) which state that bank size does bring any influence to the return on assets. According to Dietrich et al. (2009), it is because of bigger bank cannot gain profit from its product due to nonperforming loan and high cost resulting in lower return. Besides, banks tend to manage external fund (Prasanjaya and Ramantha, 2013).

The result of comparison test of Independent Sample t-Test is presented as follow:

**Table 10.** The Result of Comparison Test

	Levene's Test for Equality of Variances Sig	t-test for Equality of Means Sig (2-tailed)
Equal variances assumed	0,000	0,009
Equal variances not assumed		0,003

Source: Data Processed

The result of Levene's Test shows sig value 0.000. This value is lower than alpha ( $\alpha = 0.05$ ). It indicates that there is different variance of both samples population (equal variance not assumed). The result of comparison t-test finds sig value (2-tailed) is 0.003. This value is lower than alpha ( $\alpha = 0.05$ ) which indicates that there is significant difference of the two samples means. Thus,  $H_8$  can be accepted. There is difference in average profitability of banks in Indonesia and profitability of banks in Hong Kong.

Different profitability of banks is also portrayed in different factors affecting the profitability of banks in Indonesia and banks in Hong Kong. For banks in Indonesia, the variables affecting the return on assets are liquidity risk, total equity to assets ratio, net credit facilities to total deposits ratio, cost to income ratio, and bank size; while credit facilities to total assets ratio and total investment to total assets ratio do not affect the return on assets of banks in Indonesia.



For banks in Hong Kong, the variables affecting return on assets are liquidity risk, total equity to assets ratio, and cost to income ratio; while credit facilities to total assets ratio, total investment to total assets ratio, net credit facilities to total deposits ratio, and bank size do not affect the return on assets of banks in Indonesia.

The differences lie in net credit facilities to total deposits ratio, and bank size. For banks in Indonesia, net credit facilities to total deposits ratio, and bank size affect the return on assets. Meanwhile, for banks in Hong Kong, net credit facilities to total deposits ratio and bank size do not affect the return on assets.

The average value of net credit facilities to total deposits ratio of banks in Indonesia is 85.1555% (see Appendix 3A). This value is in accordance with the standard established by Bank of Indonesia which is 80% to 110%. Whereas the average value of net credit facilities to total deposits ratio of banks in Indonesia is as many as 0.721812 or 72.1812%. This value is below the average value of net credit facilities to total deposits ratio of banks in Hong Kong during 2012-2015 which is as much as 81% ([www.hkma.gov.hk](http://www.hkma.gov.hk)).

Banks with bigger size cannot get profit from their products due to nonperforming loan and high cost. It results in lower return obtained. It can be found from banks in Hong Kong which are bigger than banks in Indonesia. This finding is illustrated in the different average value of log total assets between banks in Indonesia as many as 13.705165; and banks in Hong Kong as many as 16.998717.

**Table 11.** The Result of T-test Research Model Banks in Indonesia

Independent Variable	Return on Assets		Conclusion
	B	Sig.	
Liquidity risk	0.074	0.001	Significant positive
Net credit facilities to total assets ratio	0.001	0.924	Insignificant
Total investment to total assets ratio	0.017	0.140	Insignificant
Total equity to assets ratio	0.049	0.006	Significant positive
Net credit facilities to total deposits ratio	0.029	0.003	Significant positive
Cost to income ratio	-0.085	0.000	Significant negative
Bank size	0.003	0.030	Significant positive

Source: Data Processed

**Table 12.** The Result of T-test Research Model Banks in Hong Kong

Independent Variable	<i>Return on Assets</i>		Conclusion
	B	Sig.	
Liquidity risk	-0.025	0.000	Significant negative
Net credit facilities to total assets ratio	-0.004	0.520	Insignificant
Total investment to total assets ratio	-0.009	0.190	Insignificant
Total equity to assets ratio	-0.077	0.002	Significant negative
Net credit facilities to total deposits ratio	-0.003	0.330	Insignificant
Cost to income ratio	-0.051	0.000	Significant negative
Bank size	0.000	0.251	Insignificant

Source: Data Processed

## 5. CONCLUSION

### 5.1. Conclusion

Based on the testing done, the research findings show that liquidity risk has significant positive influence towards return on assets of banks in Indonesia. However, liquidity risk has significant negative influence towards return on assets of banks in Hong Kong. Net credit facilities to total assets ration does not affect the return on assets of banks in Indonesia and banks in Hong Kong. Total investment to total assets ratio do not affect return on assets of banks in Indonesia and in Hong Kong.

It is found that total equity to assets ratio has significant positive influence towards return on assets of banks in Indonesia; whereas for banks in Hong Kong, total equity to assets ratio has significant negative influence towards return on assets. For banks in Indonesia, net credit facilities to total deposits ratio has significant positive influence towards return on assets. However, net credit facilities to total deposits ratio does not affect the return on assets of banks in Hong Kong.

Cost to income ratio has significant negative influence towards return on assets of banks in Indonesia and in Hong Kong. Bank size has significant positive influence towards return on assets of banks in Indonesia, but it does not affect the return on assets of banks in Hong Kong. There is difference in the average value of return on assets of banks in Indonesia and banks in Hong Kong. It means there is difference in profitability of banks in both countries.

### 5.2. Managerial Implications

Based on the conclusion drawn, the result of this research gives beneficial implications on managerial for bank institution and investor. Based on the research findings, liquidity risk needs to be considered by bank management to maintain and enhance the profitability of banks in Indonesia. The more liquid a bank, the higher profit gained. The management of bank also needs to consider the equity to

asset ratio. The bigger the capital, the smaller the cost of capital and thus the bigger the profit is. Besides, management of bank needs to consider the fund distributed to customers. The bigger the loan offered, the higher the interest income is. The other thing that needs to pay attention to is the cost to income ratio. The higher the ratio, the smaller the profit earned is. The amount of the total assets also needs to be considered. It is because total asset is the indicator of bank size. The bigger the total assets, the higher the profit earned is. So as for banking sector in Hong Kong, bank management must consider the liquidity risk and the value of equity to assets ratio that can affect the profitability of bank. The higher the liquidity risk and equity to assets ratio, the lower the profit made is. Besides, the cost to income ratio or the ratio of operational cost and operational income needs to be paid attention to. The higher the ratio, the lower the profit earned is.

For investors who want to invest in banking sector in Indonesia, they have to consider the profitability of bank based on the return on assets which is affected by liquidity risk, total equity to assets ratio, net credit facilities to total deposits ration, and bank size. The higher the ratio, the higher the profit the bank can earn is. Other factor investors need to consider is cost income ratio. The higher the ratio, the lower the profit has made. For investors who plan to invest in banking sector in Hong Kong, there are factors to consider in valuing the profitability of bank. Those are liquidity risk, total equity to assets ratio, and cost to income ratio. The higher those three ratios, the lower profit a bank can make is.

### **5.3. Suggestion for Future Research**

In this research, the variables used to portray the profitability of bank are only return on assets. It is suggested for future research to use other variables to illustrate the profitability of bank, such as return on equity (Ali, 2016). Moreover, it is suggested for future researcher to use other independent variables that can influence the profitability of bank, such as inflation and gross domestic product (Ali, 2016) as well as capital adequacy ratio and nonperforming loan (Suryani et al., 2016).

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